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BRINKS HOFER GILSON & LIONE
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
COZART, JERMIE E	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/853,945
Filing Date: May 11, 2001
Appellant(s): IMUNDO ET AL.

Anastasia Heffner
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/21/07 appealing from the Office action mailed 6/15/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,913,555	Richter et al.	06-1999
5,736,201	Flint	07-1997
5,285,397	Heier et al.	02-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4, 5, 7, 9, 10, 12, 13, 15, 16, 18, 20, and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Richter et al. (5,913,555) in view of Heier et al. (5,285,397).

Regarding *claims 1 and 12*, Richter discloses a method for repairing a sheet metal portion (4) of a structure (2), wherein a digital measuring device (10) is oriented. The device (10) captures the image of the structure in at least two dimensions in order to reproduce a sheet metal (col. 2, lines 17-22) repair part (4'). Richter also discloses measuring at least a portion of the structure (2) with the digital imaging device (10),

saving the data generated in measuring the structure, and using the data to manufacture a repair part (4`). *See column 4, lines 38-59 for further clarification.*

Regarding *claims 4 and 15*, Richter discloses installing the sheet metal repair part (4'). *See column 5, lines 31-36 for further clarification.*

Regarding *claims 7 and 18*, Richter discloses automatically manufacturing comprising a multi-step process for material removal and material shaping such as cutting of the contour of the repair profile (4`) from the sheet (14) by a CNC laser cutting apparatus, followed by welding, and then after machining the resultant weld or soldering seam produced by attachment of the repair part (4`) to the remaining blade portion (2). *See column 4, line 53 – column 6, line 14 for further clarification.*

Regarding *claims 10 and 20*, Richter discloses a data manipulation step consisting of transferring data by delivering the data from the computer (11) to the CNC control unit (12). *See column 2, lines 30-33 for further clarification.*

Richter, however, does not explicitly disclose the following: whether the digital measuring device is a multi-axis digital measuring device; adding additional data for use in automatically manufacturing the repair part; orienting the device with respect to the structure via an orienting feature selected from the group consisting of plumb lines, orientation holes, a feature of the structure, and a feature of the portion; or translating the data from a first format to a second format.

Heier discloses orienting a multi-axis digital measuring device (7a-7d), adding additional data (i.e. position measurement values, angular measurement values) for use in a manufacturing process. Each of the devices (7a-7d) are oriented with respect to

the structure (3) via a feature of the structure meaning that devices are oriented/spaced around the periphery of the structure to capture particular features of the structure (3). The data is translated [via algorithms of three dimensional intersect (triangulation)] from a first format (i.e. stored calibration data, measurement data delivered by the image processing device) to a second format (i.e. calculated coordinates of each point on the part). *See column 3, line 57 – column 6, line 11, plus figures 1 and 6 for further clarification.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide digital measuring device of Richter as a multi-axis digital measuring device, to add additional data for use in automatically manufacturing the repair part, to orient the device with respect to the structure via an a feature of the structure, and to translate the data from a first format to a second format, in light of the teachings of Heier, in order to effectively record horizontal optical intersects of a given work-piece at different heights.

Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter/Heier as applied to claims 1 and 12 above, and further in view of Applicants' Appeal Brief (3/25/04).

Richter/Heier as modified above discloses all of the claimed subject matter except for planning a process to manufacture the repair part.

Applicants' Appeal Brief discloses at page 9, "that manufacturing process planning, and the details of manufacturing process planning, are well known to those skilled in manufacturing engineering." Applicant's Appeal Brief goes on to state that "a process plan is a very detailed, step-by-step process of how to accomplish the

manufacturing. For instance, in the above process, one step would be to state that the repair pad will be manufactured in a given department and perhaps on a given machine, using a particular set of tools and a particular CNC program."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to plan a process to manufacture the repair part of Richter/Heier, in light of the teachings of Applicants' Appellant Brief, in order to determine how to accomplish the manufacturing of the part.

Claims 8, 11, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter/Heier as applied to claims 1 and 12 above, and further in view of Flint (5,736,201).

Richter/Heier as modified above discloses all of the claimed subject matter except for transferring the repair part from a first workstation to a second workstation, or mounting a laser-scanning device on the multi-axis digital measuring device, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device.

Flint discloses transferring an unfinished part (PFH) from a first workstation (second support) to a second workstation (third support) in order to build a duplicate product and match the color of the duplicated part to the original part, and mounting (meaning to arrange for use, see *Webster's Collegiate Dictionary, tenth edition*) a laser-scanning device, in order to record the topography of the object being scanned to produce a digitized signal. The laser is mounted on the multi-axis digital measuring

device, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device. *See figure 1, plus columns 2 and 3 for further clarification.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to transfer unfinished repair part of Richter/Heier from a first workstation to a second workstation for additional finishing steps, in light of the teachings of Flint, in order to more effectively build a duplicate product based on the scanned information. It would also have been obvious to mount a laser-scanning device on the multi-axis digital measuring device of Richter/Heier, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device, in light of the teachings of Flint, in order to accurately record the topography of the object being scanned to produce a digitized signal.

(10) Response to Argument

Appellant states with respect to claims 1, 4, 5, 7, 12, 15, 16, and 18 that there is insufficient motivation to justify combining the Richter and Heier references, and that the rejection fails to make out a prima facie rejection because the Office Action has not analyzed the references sufficiently to make a showing that the combination has a reasonable expectation of success.

In response, the Examiner maintains that both Richter and Heier each disclose digital measuring devices. The digital measuring device (4) of Richter measures the existing actual geometry[i.e. three dimension] of the end of the remaining blade portion, Heier uses a multi-axis digital measuring device (7a-d) to take measurements of a part.

The multi-axis digital measuring device (7a-d) of Heier moves along multiple axes and can accordingly take measurements. Although Heier discloses the use of more than multi-axis digital measuring device, each multi-axis digital measuring device performs a measurement and the fact that Appellant's invention uses a multi-axis digital measuring device is clearly obviated by the teachings of Richter in view of Heier. The benefit of providing the digital measuring device of Richter as a multi-axis digital measuring device as described by Heier is to allow the device to measure different portions of the part at different positions thereby allowing a comprehensive image to be created. Furthermore, although Richter does not explicitly teach a digital measuring device capable of movement along multiple axes, the digital measuring device (10) can be construed to the meet the claim limitation of "a multi-axis digital measuring device" since it is capable of taking digital measurements along multiple axes.

Appellant states with respect to claims 2 and 13 that Heier fails to disclose "adding additional data" since the position measurement values and angular measurement values" since these values are part of the orient and measuring steps of claim 1.

In response, the Examiner maintains that even if the "position measurement values" are considered to be part of the orienting and measuring steps of claim 1, the "angular measurement values" can be considered as additional data since these values are not necessarily saved in the steps of claim 1. The data which is generated and saved in measuring the structure is the position measurement values, therefore the "angular measurement values" which are associated with the multi-axis digital

measuring device can be considered as "additional data". The specification does not clearly discern what can be considered as "additional data", therefore the "angular measurement values" have been reasonably interpreted as "additional data" because the values are not data generated in measuring the structure (i.e. position measurement values).

Appellant states with respect to claims 9 and 21 that Heier does not disclose "translating" data from a first format to a second format, however, Heier does disclose calculation and manipulation of data. Appellant goes on to state that a person of ordinary skill in CNC arts would recognize that "translating data" from a first format to a second format is different from manipulating data or suing data in calculations.

In response, the Examiner maintains that "translate" means to change, and that Heier does in fact change the data [via algorithms of three dimensional intersect (triangulation)] from a first format (i.e. stored calibration data, measurement data delivered by the image processing device) to a second format (i.e. calculated coordinates of each point on the part). Further, the Examiner maintains that the claimed limitation does not require the first and second formats to be different. The claims also do not require that the data be used in combination with a CNC machine. The interpretation of claim limitation "translate" by the Examiner is reasonable based on the fact that the claim language does not preclude merely calculating necessary measurement values.

Appellant states with respect to claims 3 and 14 that the Examiner may not use the previous appeal brief filed 3/25/04 as evidenced for these claims since the application was filed three years before the appeal brief.

In response, the Examiner maintains that although the appeal brief has been filed after the patent application, Appellant acknowledges in the appeal brief filed 3/25/04 that "planning a process to manufacture a repair part" is well known to those in manufacturing engineering. The mere fact that this admission was made in the appeal brief filed 3/25/04 does not preclude the fact that one of ordinary skill in the art would have prior knowledge to plan a process to repair a part prior to the filing date of the present application. In addition, it is inherent that Richter had to somehow plan a process to manufacture the repair part by the inherent order of steps in repairing the part(col. 4, line 38 – col. 6, line 14).

Appellant states with respect to claims 8, 11, 19, and 22 that there is no motivation to combine Flint with either Richter or Heier because using digital cameras already produces digitized signals and one would not be motivated to achieve a digitized signal via a laser.

In response, the Examiner maintains that to substitute the digital axis measuring device of Richter/Heier with the multi-axis digital measuring device of Flint, wherein the multi-axis digital measuring device comprises a laser scanner, would have been obvious to one having ordinary skill in the art at the invention was made to effectively record the geometry of the part such that it can eventually be accurately replicated. The fact that Flint produces a digitized signal as well an alternative multi-axis digital

measuring device reinforces the interchangability of the two multi-axis digital measuring devices. Therefore, Flint merely provides an alternative multi-axis digital measuring which is capable of producing digitized signals as the devices in both Richter and Heier.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jermie Cozart, *Primary Examiner 3726*

Conferees:

David Bryant, *SPE 3726*

Boyer Ashley, *SPE 3724*